REMARKS

Claims 1-16 are pending in the application.

Claims 1-16 are rejected.

I.   REJECTION UNDER 35 U.S.C. § 103(a)

The Examiner rejected Claims 1 and 13 under *35 U.S.C. § 103(a)* as being unpatentable over U.S. Patent 6,182,139 to *Brendel* (hereafter "*Brendel*"), in view of U.S. Patent 6,185,601 to *Wolff* (hereafter "*Wolff*").

To establish a *prima facie* case of obviousness, the Examiner must meet three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be some reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations.

The Examiner states that *Brendel* discloses the invention substantially as claimed including a data transmission system operable for transmitting packet data from an Internet Protocol (IP) host over an IP network comprising an IP layer [18, Figure 3], a network layer coupled to the IP network [22, Figure 3], wherein the IP host is coupled to the IP network via a layer 2 network [30, Figure 3; and column 6, lines 13-16] and a Multiple Address Resolution Protocol (MARP) layer [20, Figure 3; and column 11, lines 19-26], the MARP layer between the IP layer and the network layer, the MARP layer operable for selecting one router of the set of routers in response to a next hop IP address provided by the IP layer to the MARP layer when a packet of data is to be transmitted from the IP host over the IP network [column 11, lines 1-9, lines 9-30].

Claim 1 of the present invention recites a data transmission system operable for transmitting packet data from an Internet Protocol (IP) host over an IP network comprising an IP layer, a network layer coupled to the IP network, wherein the IP host is coupled to said IP network via a layer 2 network, the layer 2 network interfacing the

IP network with a set of routers, and <u>a Multiple Address Resolution Protocol (MARP)</u> <u>layer</u>, the <u>MARP layer between the IP layer and the network layer</u>, the MARP layer operable for selecting one router of the set of routers in response to a next hop IP address provided by the IP layer to the MARP layer when a packet of data is to be transmitted from said IP host over the IP network. The Examiner states that the Client-side Dispatcher 20 is the MARP layer citing the Client-side Dispatcher 20 in Figure 3 and column 11, lines 19-26. This recitation is explaining one aspect of multicast from the client-side dispatcher to multiple servers to find the fastest-responding server to hand a request. The Examiner does not clearly point out what in the cited prior art the Examiner believes teaches or suggests the MARP layer of Claim 1. The MARP layer of Claim 1 is a term that is clearly explained in the Specification relative to the explanation of FIG. 4. While an ARP layer may be found in the prior art, a MARP layer is an embodiment of the present invention, in particular, the invention of Claim 1. Nowhere in *Brendel* is the term MARP used nor does *Brendel* teach a layer with the functionality of the MARP layer of Claim 1. The Examiner may give the term MARP layer its broadest <u>reasonable</u> interpretation. Since MARP is a term defined by the Applicant, the broadest reasonable interpretation must be found in the Specification of the present invention. The Examiner makes no attempt to explain why he believes the MARP layer of Claim 1 is the same as the Client-side Dispatcher 20 in Figure 3 of *Brendel*. Further, the Applicant specifically states in Claim 1 that the MARP layer is operable for selecting one router of the set of routers in response to a next hop IP address provided by said IP layer to said MARP layer when a packet of data is to be transmitted from said IP host over said IP network. The Examiner states that *Brendel* does not specifically disclose "the layer 2 network interfacing the IP network with a set of routers." The Applicant respectfully asserts that if *Brendel* does not teach or suggest that the IP host is coupled to said IP network via a <u>layer 2 network, the layer 2 network interfacing the IP network with a set of routers</u> (as admitted by the Examiner) then *Brendel* cannot teach or suggest a Multiple Address Resolution Protocol (MARP) layer, wherein the MARP layer is between the IP layer and the network layer and the MARP layer operable for <u>selecting one router of the set of</u>

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routers (not taught or suggested by *Brendel*) in response to a next hop IP address provided by the IP layer to the MARP layer when a packet of data is to be transmitted from said IP host over the IP network. Thus, by his own admission, the Examiner is stating that the Client-side Dispatcher 20 of *Brendel* does not have the same functionality as the MARP layer of Claim 1.

The Examiner then states that *Wolff* discloses the layer 2 network interfacing the IP network with a set of routers citing Figures 1A-C; and column 4, lines 36-50. The Applicant has shown that *Brendel* does not teach or suggest the MARP layer of Claim 1. The Examiner makes no assertion that *Wolff* teaches or suggests the MARP layer of Claim 1. Figures 1A-C of *Wolff* do not show any routers that the Applicant can discern. In column 4, lines 36-50, *Wolff* states only that "Clients can include, but are not limited to, computers, gateways, bridges, routers, phones, and remote access devices." Nowhere does *Wolff* teach or suggest the MARP layer of Claim 1. The Applicant has shown that *Brendel* and *Wolff*, either singly or in combination, do not teach or suggest the MARP layer of Claim 1. Likewise, the Applicant respectfully asserts that *Wolff*'s simple statement that "Clients can include, but are not limited to, computers, gateways, bridges, routers, phones, and remote access devices" cannot be construed to include the recitation of Claim 1 that "the IP host is coupled to said IP network via a layer 2 network, the layer 2 network interfacing the IP network with a set of routers." The Applicant, therefore, asserts that one of ordinary skill in the art would not arrive at the invention of Claim 1 by combining the teachings of *Brendel* and *Wolff*. The Applicant further asserts that the rejection of Claim 1 under *35 U.S.C. § 103(a)* as being obvious over *Brendel* in view of *Wolff* is traversed.

The Examiner rejected Claim 13 for similar reasons as Claim 1. Furthermore, the Examiner states that *Brendel* discloses an IP host [10, Figure3], a Local Area Network (LAN) coupled to the IP host [column 15, lines 25-31], and IP network coupled to the LAN [66, Figure; 1 and 30, Figure 3] and a set of workstations coupled to the LAN via the IP network [column 15, lines 22-31]. Element 10 in Figure 3 of *Brendel* is a Client and not an IP Host. In the disclosure of the present invention, the elements contained in

Client 10 of *Brendel* are contained in the set of protocols 28 of the present disclosure. In the present disclosure, the IP Host 10 is coupled to 28 and would be equivalent to coupling an IP Host to Client 10 of *Brendel*. The Client 10 of *Brendel* consists of the Application 14, TCP layer 16, IP layer 18, Client-side Dispatcher 20 and DYN Link 22. Client 10 is coupled to network 30 and not to an IP Host. In column 15, lines 25-31, *Brendel* does not mention the term LAN. Element 66 of Figure 1 of *Brendel* is the Internet and is not a LAN. Further, if Client 10 of Figure 3 is equivalent to an IP Host as stated by the Examiner then Figure 1 of *Brendel* shows an IP Host coupled to the network 30 and not an IP Network coupled to a LAN as is stated in Claim 13.

Claim 13 recites an Internet Protocol (IP) network comprising an IP host, a Local Area Network (LAN) coupled to the IP host, an IP network coupled to the LAN, a set of workstations coupled to the LAN via the IP network, the IP host further comprising an IP layer, a network layer coupled to the IP network, wherein said IP host is coupled to said IP network via a layer 2 network, said layer 2 network interfacing said IP network with a set of routers, and a Multiple Address Resolution Protocol (MARP) layer, said MARP layer between said IP layer and said network layer, said MARP layer operable for selecting one router of said set of routers in response to a next hop IP address provided by said IP layer to said MARP layer when a packet of data is to be transmitted from said IP host over said IP network. The Applicant respectfully asserts that *Brendel* does not teach or suggest all the limitations of Claim 13 and therefore asserts that the rejection of Claim 13 under *35 U.S.C. § 103(a)* as being obvious over *Brendel* in view of *Wolff* is traversed for the reasons stated above and for the same reasons as Claim 1.

The Examiner rejected Claims 2-12 and 14-16 under *35 U.S.C. § 103(a)* as being obvious over *Brendel* in view of *Wolff* and further in view of U.S. Patent 6,016,319 to *Kshirsagar et al.* (hereafter *"Kshirsagar"*).

Claim 2 is dependent from Claim 1 and contains all the limitations of Claim 1. Claim 2 adds the limitation that the IP host of Claim 1 is provided with an Address Resolution Protocol (ARP), the ARP operable to convert any IP address into a network address of a router to be used in the layer 2 network by mapping the IP address in an ARP

table into a network address of an active router selected from the set of routers. The Applicant has shown that *Brendel* and *Wolff* do not teach or suggest, either singly or in combination, the invention of Claim 1. The Examiner does not assert that *Kshirsagar* teaches or suggests the invention of Claim 1. Therefore, the Applicant asserts that *Brendel*, *Wolff*, and *Kshirsagar* do not teach or suggest, either singly or in combination, the invention of Claim 1. Since *Kshirsagar* does not teach or suggest the invention of Claim 1, *Kshirsagar* cannot teach the invention of Claim 2 which further limits the IP host of Claim 1. Therefore, the Applicant respectfully asserts that the rejection of Claim 2 under *35 U.S.C. § 103(a)* as being obvious over *Brendel* in view of *Wolff* and further in view of *Kshirsagar* is traversed for the reasons stated above and for the same reasons as Claim 1.

Claim 3 is dependent from Claim 2 and contains all the limitations of Claim 2 and Claim 1. Claim 3 adds the limitation that the MARP layer includes, a MARP table mapping the next hop IP address into a list of IP addresses of routers, the router addresses indicating routers selectable from the set of candidate routers, the IP addresses of the routers being mapped in the ARP table indicating active candidate routers able to be used as routers for transmitting the packet of data from the IP host to one or more of the workstations via the IP network. The Examiner states that *Brendel* discloses the MARP table mapping the next hop IP address into a list of IP addresses of routers of Claim 3 and cites column 13, lines 50-51. The Applicant has shown that *Brendel* does not teach or suggest the MARP layer of Claim 1 and thus *Brendel* cannot teach or suggest a MARP table contained in the MARP layer. In column 13, lines 50-51, *Brendel* is describing an operation of his Scheduling-Policy Server queried by the Client-side Dispatcher. Nowhere in this recitation is the invention of Claim 3 taught or suggested.

The Examiner states that Brandel teaches limitation of Claim 3 wherein the router addresses indicate routers selectable from the set of candidate routers and cites Brandel column 13, lines 40-46. In this recitation, *Brendel* describes an operation of his Scheduling-Policy Server queried by the Client-side Dispatcher. There is no mention, in this recitation of *Brendel*, of router addresses, or routers selectable from the set of

candidate routers as recited in Claim 3 of the present invention. Nowhere does *Brendel* teach or suggest the invention of Claim 3.

The Examiner states that Brandel teaches limitation of Claim 3 wherein the IP addresses of the routers are mapped in the ARP table indicating active candidate routers able to be used as routers for transmitting the packet of data from the IP host to one or more of the workstations via the IP network and cites Brandel column 10, lines 25-28 and column 12, lines 6-8. In this recitation, *Brendel* is describing an operation of his delayed URL based dispatch from the Client-side Dispatcher to the server. There is no mention, in this recitation of *Brendel*, of IP addresses of the routers being mapped in the ARP table as recited in Claim 3 of the present invention. Nowhere in this recitation is the invention of Claim 3 taught or suggested. The Applicant has shown that *Brendel* does not teach or suggest the invention of Claims 1 and 2. Further, the Applicant has shown that *Brendel* does not teach or suggest the limitations of Claim 3. Therefore, the Applicant respectfully asserts that the rejection of Claim 3 under *35 U.S.C. § 103(a)* as being obvious over *Brendel* is traversed for the reasons stated above and for the same reasons as Claims 1 and 2.

Claim 4 is dependent from Claim 3 and contains all the limitations of Claims 3, 2, and 1. Claim 4 adds the limitation that one of the routers is selected amongst the active candidate routers by using hash coding techniques based upon destination IP addresses, a pair of source destination ports in the packet of data to be transmitted, and the active candidate router IP addresses. The Examiner states that *Brendel* teaches Claim 4 and cites column 11, lines 24-26 and column 12, lines 1-8. In column 11, lines 24-26 *Brendel* states: "Multiple copies of the SYN packet are generated, and the destination IP address and TCP ports changed in each packet to a different server." There is no mention in this recitation of selecting amongst active candidate routers using hash coding techniques nor is there any mention of selection amongst active candidate routers using any means. In column 12, lines 1-8, *Brendel* describes his Session Table Index shown in FIG. 9. *Brendel* only states in this recitation that the session table is a hash table. Simply mentioning that a table is a hash table does not teach or suggest the invention of

Claim 4 which contains all the limitations of the chain of Claims 3, 2, and 1 from which Claim 4 depends. The Applicant respectfully asserts while *Brendel* may mention the term "hash", *Brendel* does not teach or suggest the invention of Claim 4. Therefore, the Applicant asserts that rejection of Claim 4 under *35 U.S.C. § 103(a)* as being obvious over *Brendel* is traversed for the reasons stated above and for the same reasons as Claims 1, 2, and 3.

The Examiner states that Claims 5, 6, and 7 are the method claims of Claims 1, 2, and 3 and therefore states that they are rejected for the same reasons as Claims 1, 2, and 3. However, the Examiner goes on to state that *Wolff* discloses (sic) "list of active candidate routers determined before selecting from said set of routers" and cites *Wolff*, column 3, lines 5-15. The Examiner states that it would have been obvious to combine the teachings of *Brendel*, *Wolff*, and *Kshirsagar* as (sic) "*Wolff's* teaching of determining step of active routers would allow host to determine path to transmit its request for better load balancing." Claim 5 recites a method of selecting a router by an IP host in a data transmission system transmitting packetized data from said IP host having at least an IP layer and a network layer to a plurality of workstations by an intermediary of an IP network, and wherein said IP host is coupled to said IP network via a layer 2 network interfacing said IP network by a set of routers, said method comprising three steps; 1) determining a list of candidate routers from said set of routers, 2) determining a list of active candidate routers from said list of candidate routers, said list of active candidate routers determined before selecting, from said set of routers, said router to be used for transmitting said packetized data, and 3) selecting said router to be used for transmitting said packetized data from said list of active candidate routers. The Examiner states that *Wolff* teaches step 1) of Claim 5 in the cited reference. In column 3, lines 5-15, *Wolff* teaches only one determining step: "(2) determining a utilization condition on the first of the plurality of server nodes." This determining step is not the same as either step 1) or step 2) recited in Claim 5. The step in *Wolff* cited by the Examiner is not the same as any step in Claim 5. The Examiner then states that it would have been obvious to combine *Wolff* with *Brendel* and *Kshirsagar* without specifically pointing out what

Brendel and *Kshirsagar* adds to *Wolff*. Further, the Examiner fails to point out any suggestion or motivation for one of ordinary skill in the art to combine the teachings of *Wolff*, *Brendel*, and *Kshirsagar* to arrive at the invention of Claim 5. Likewise, the Examiner fails to address all of the steps in Claim 5 and thus by omission admits that the invention of Claim 5 is not taught or suggested by *Wolff*, *Brendel*, and *Kshirsagar* singly or in combination. Therefore, the Applicant asserts that the rejection of Claim 5 under *35 U.S.C. § 103(a)* as being obvious over *Wolff* in view of *Brendel* and *Kshirsagar* is traversed for the reasons stated above and for the same reasons as Claims 1, 2, and 3.

Claim 6 is dependent from Claim 5 and contains all the limitations of Claim 5. Claim 6 adds the limitation that step 1) is performed by a Multiple Address Resolution Protocol (MARP) layer between said IP layer and said network layer of said IP host. The Applicant has shown that *Brendel*, *Wolff*, and *Kshirsagar* do not teach or suggest a MARP layer either singly or in combination. The Applicant has shown that the Examiner did not make a *prima facie* case that Claim 5 is obvious over *Wolff* in view of *Brendel* and *Kshirsagar*. The Applicant, therefore asserts that *Brendel*, *Wolff*, and *Kshirsagar* do not teach or suggest the limitation of Claim 6, either singly or in combination. Therefore, the Applicant further asserts that the rejection of Claim 6 under *35 U.S.C. § 103(a)* as being obvious over *Wolff* in view of *Brendel* and *Kshirsagar* is traversed for the reasons stated above and for the same reasons as Claim 5.

Claim 7 is dependent from Claim 6 and contains all the limitations of Claim 6. Claim 7 adds the limitation wherein the step of determining the list of candidate routers is performed by the MARP layer by a look up in a MARP table using a next hop IP address as an entry. The Applicant has shown that *Brendel*, *Wolff*, and *Kshirsagar* do not teach or suggest, singly or in combination, the invention of Claim 6. Therefore, the Applicant asserts that *Brendel*, *Wolff*, and *Kshirsagar* do not teach or suggest, singly or in combination, the invention of Claim 7 which further limits Claim 6. Therefore, the Applicant further asserts that the rejection of Claim 7 under *35 U.S.C. § 103(a)* as being obvious over *Wolff* in view of *Brendel* and *Kshirsagar* is traversed for the reasons stated above and for the same reasons as Claim 6.

The Examiner rejected Claim 8 for the same reasons as Claim 4 stating that Claim 8 is the method claimed in Claim 4. Claim 8 is dependent from Claim 7 and contains all the limitations of Claim 7. Claim 8 adds the limitation of the step of selecting the router to use for transmitting the packetized data is performed by using hash coding techniques based upon destination IP addresses, a pair of source and destination ports in the packetized data to be transmitted, and IP addresses of the active candidate routers. The Applicant, therefore, asserts that the rejection of Claim 8 under *35 U.S.C. § 103(a)* as being obvious over *Wolff* in view of *Brendel* and *Kshirsagar* is traversed for the reasons stated above and for the same reasons as Claims 4 and 7.

The Examiner rejected Claims 9-12 for the same reasons as Claims 5-8 stating that Claims 9-12 are the product claims to Claims 5-8. Therefore, the Applicant asserts that the rejections of Claims 9-12 under *35 U.S.C. § 103(a)* as being obvious over *Wolff* in view of *Brendel* and *Kshirsagar* are traversed for the same reasons as Claims 5-8.

The Examiner rejected Claims 14-16 for the same reasons as Claims 2-4. Claims 14-16 are sequentially dependent from Claim 13. The Examiner rejected Claim 13 as being obvious over *Brendel*. The Applicant has shown that Claim 13 is not taught or suggested by *Brendel*. The Examiner has not stated that *Wolff* or *Kshirsagar*, singly or in combination, teach or suggest the invention of Claim 13; therefore, the Applicant asserts that Claims 14-16, which further limit Claim 13, are not taught or suggested by *Brendel*, *Wolff*, and *Kshirsagar*, singly or in combination. Therefore, the Applicant asserts that the rejections of Claims 14-16 under *35 U.S.C. § 103(a)* as being obvious over *Wolff* in view of *Brendel* and *Kshirsagar* are traversed for the same reasons as Claims 2-4 and for the same reason as Claim 13.

II.   CONCLUSION

The rejections of Claims 1-16 have been traversed. The Applicant, therefore, respectfully asserts that Claims 1-16 are now in condition for allowance and requests an early allowance of these claims.

Applicant respectfully requests that the Examiner call Applicant's attorney at the below listed number if the Examiner believes that such a discussion would be helpful in resolving any remaining problems.

Respectfully submitted,

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